Product Design Specification

For

Stargazer Platform for a Telescope

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Introduction:
This device will consist of a platform in which any device placed on it will see motionless stars at any latitude. It will be able to track the sun, moon and stars so an astronomer can observe and photograph them without trails.

Objectives:
- To design a device that will track the stars so they are motionless relative to the telescope.
- To design a device that will track the sun, moon and stars at their different speeds.
- To design a device that will support a 150 pound 18" telescope on a 24" by 24" base.
-To guarantee safe operation of the device for its lifetime.

Scope:
-The device will be universal to support a wide range of telescopes.

User/Operation Requirements:
- The user will need to place the telescope on the platform in the desired location.
- In the beginning, the user will be required to focus on the desired celestial body.
- The platform will be controlled by a PIC board to choose if it is tracking the sun, moon or a star.
- Possible additional features may be incorporated.

Constraints and Acceptance Standards:
- The platform needs to support an 18", 150 pound telescope.
- Power for the motors will be provided by an AC power supply so an electrical outlet will need to be accessible.
- Cost for the device will not exceed $100.
- Must survive prolonged placement of a telescope.
- Must be legal in all states.
- The device will not be waterproof, will withstand standard humidity and reasonable outdoor temperatures.
-Should not infringe on any existing patents.

Functions and Performance Requirements:
- The platform will have adjustable feet to allow for uneven surfaces.
-The base of the platform will have a clamping mechanism to ensure the telescope does not move.
-The software will allow the platform to be used at any latitude.
- The device will be turned by the user.
- The system will be able to follow the varying speeds of the sun, moon and stars.

Manufacturing Requirements:
-Prototype of design to be delivered by December with final design completed by the end of April.
-Prototype will be made of wood, stepper motors and a PIC board.

Disposal:
-The platform does not contain any hazardous materials. The PIC board will need to be properly disposed of.